

**I. AMENDMENTS TO THE CLAIMS:**

Please amend claims 14 and 19 as follows, and cancel claims 15, 16 and 20 without prejudice, add new claims 34 and 35.

The following listing of claims replaces all prior listings, or versions, of claims in the above-captioned application.

**LISTING OF CLAIMS:**

Claims 1 – 13 are cancelled.

14. (Currently Amended) A master alloy for casting a copper alloy, consisting of  
comprising:  
Cu: 40 to 80 wt.%;  
Zr: 0.5 to 35 wt.%;-and  
at least one element selected from the group consisting of Mg: 0.01 to 1 wt.%, Sn:  
0.1 to 5 wt.%, B: 0.01 to 0.5 wt.%, Mn: 0.01 to 5 wt.% and Si: 0.01 to 1 wt.%; and  
the balance of Zn.

15-16. (Cancelled).

17. (Previously Presented) The master alloy for casting a copper alloy according to claim 14,  
wherein said Cu occupies 50 to 65 wt.%, and said Zr occupies 1 to 10 wt.%.

18. (Previously Presented) The master alloy for casting a copper alloy according to claim 14,  
wherein said master alloy is an ingot formed in a shape of a boat, continuous casting

material formed in a shape of a rod or wire, or hot extrusion material formed in a shape of a rod or wire.

19. (Currently Amended) A master alloy for casting a copper alloy, consisting of comprising:

Cu: 40 to 80 wt.%;

Zr: 0.5 to 35 wt.%;

P: 0.01 to 3 wt.%; ~~and~~

at least one element selected from the group consisting of Mg: 0.01 to 1 wt.%, Sn: 0.1 to 5 wt.%, B: 0.01 to 0.5 wt.%, Mn: 0.01 to 5 wt.% and Si: 0.01 to 1 wt.%; and

the balance of Zn.

20. (Cancelled).

21. (Previously Presented) The master alloy for casting a copper alloy according to claim 19,

wherein said Cu occupies 50 to 65 wt.%, and said Zr occupies 1 to 10 wt.%.

22. (Previously Presented) The master alloy for casting a copper alloy according to claim 19,

wherein said master alloy is an ingot formed in a shape of a boat, continuous casting material formed in a shape of a rod or wire, or hot extrusion material formed in a shape of a rod or wire.

23. (Withdrawn) A method of casting a modified copper alloy from a molten copper

alloy containing Zr and P, the method comprising the steps of:

- providing a molten copper alloy;
- adding at least Zr in the form of Cu–Zn–Zr alloy or Cu–Zn–Zr–P alloy into said molten copper alloy;
- and casting said molten copper alloy.

24. (Withdrawn) The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 23,

wherein Zr is added in the form of Cu–Zn–Zr–P alloy and concentration of the metal Zr in the molten alloy is in a range of 5 ppm or more in the presence of P when the molten copper alloy begins to solidify.

25. (Withdrawn) The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 24,

wherein concentration of the metal Zr in the molten alloy is in a range of 20 to 500 ppm in the presence of P when the molten copper alloy begins to solidify.

26. (Withdrawn) The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 24,

wherein an amount ratio of P to Zr in said molten copper alloy satisfies  $0.5 < P/Zr < 150$ .

27. (Withdrawn) The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 26,

wherein the amount ratio of P to Zr in said molten copper alloy satisfies  $1 < P/Zr < 50$ .

28. (Withdrawn) The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 27,  
wherein the amount ratio of P to Zr in said molten copper alloy satisfies  $1.2 < P/Zr < 25$ .

29. (Withdrawn) The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 24,  
wherein primary alpha phases begin to be crystallized during solidification.

30. (Withdrawn) The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 29,  
wherein beta phases are crystallized by peritectic or eutectic reactions.

31. (Withdrawn) The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 29,  
wherein one or more phases selected from the group consisting of kappa, gamma, delta and mu phases are precipitated in an alpha phase matrix by a solid phase reaction.

32. (Withdrawn) The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 23,  
wherein a copper alloy to be modified is one selected from the group consisting of Cu – Zn, Cu – Zn – Si, Cu – Zn – Sn, Cu – Zn – Al, Cu – Zn – Bi, Cu – Zn – Pb, Cu – Zn – Si – Mn, Cu – Zn – Si – Pb, Cu – Zn – Si – Sn, Cu – Zn – Si – Al, Cu – Zn – Sn – Pb, Cu – Zn – Sn – Bi, Cu – Zn – Sn – Al, Cu – Sn, Cu – Sn – Pb, Cu – Sn – Bi, Cu – Al, Cu – Al – Si, Cu –

Si, Cu – Cr, Cu – Pb, Cu – P, and Cu - Te.

33. (Withdrawn) The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 32,

wherein said copper alloy to be modified satisfies  $60 < \text{Cu} - 3.5\text{Si} - 1.8\text{Al} - 0.5\text{X} + 0.5\text{Y} + \text{Mn} < 90$  where X is Sn, Sb, As or Mg and Y is Pb, Bi, Se, Te or Cr.

34. (New) The master alloy for casting a copper alloy according to claim 14, wherein the master alloy has a grain size of 50 $\mu\text{m}$  or less, after casting.

34. (New) The master alloy for casting a copper alloy according to claim 19, wherein the master alloy has a grain size of 50 $\mu\text{m}$  or less, after casting.